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Medical Imagery

Bilateral Erythematous-Edematous Plaques on Armpits

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1. Introduction

The use of natural cosmetics has been in vogue in recent decades. The products are promoted as healthy compounds, with no capacity to cause skin damage. The armpits are an area of special interest for the development of contact dermatitis. Occlusion, sweating, and thinner skin are one of the reasons that inflammatory skin reactions can be observed after the use of cosmetics.

An 86-year-old man, without dermatological personal history of interest, was referred to the Contact Eczema Department of Hospital Universitario San Cecilio, Granada, Spain on February 2020, with skin lesions on both armpits developing for 2 months. The patient reported intense itching in the areas. The patient had no personal history of interest and no atopic dermatitis or psoriasis was reported. Medium potency topical corticosteroids improved the lesions, but the recurrence was in a few days. On physical examination, erythematous-edematous plaques, shiny, infiltrated to the touch, with well-defined edges, without vesiculation or peeling, were observed in both armpits. Two weeks before the first time the eczema appear, the patient began applying a new natural deodorant composed by alum stone (with a 50% of alum and 50% of salvia hidrolate). Wood lamp was negative. Skin biopsy was compatible with eczema.

2. Comment

Patch tests were performed with the European Comprehensive Baseline Series (Chemotechnique Diagnostics, Vellinge, Sweden) and alum stone deodorant "as is". The results were interpreted according to the criteria of the International Contact Dermatitis Research Group. Patch tests were read on day (D) 2 and D4. Severe dilutions with alum stone material were prepared at different concentrations: 0.1%, 1%, 5%, and 10% in petrolatum. The patient showed an irritant patch test reaction to alum stone in 1%–5%–10% concentration at D2, without reaction at D4. None of 20 control tested showed positive irritant reaction. Irritant contact dermatitis caused by alum stone deodorant was diagnosed. Complete clearance of the skin lesions was observed when the patient stopped using the natural deodorant in a week.

Cases of allergic contact dermatitis have been reported to clindamycin,[1] methylisothiazolinone,[2] Lyral,[3] farnesol,[4] linalool,[5] lichen acid mix,[6] among others. Irritant contact eczemas are most frequent, and the prevalence is possibly not well known because patients do not consult for dermatologists.

Alum stone is a sulfate crystal attached to a trivalent metal, which is usually aluminum, and a monovalent one, which is potassium in natural stone. Thus, this structure forms crystals in nature that have been extracted since ancient times due to its wide variety of uses, since when in contact with water or acidic substances, the stone dissolves creating a crystalline layer and more or less hard with

Figure 1. (A) Erythematous edematous plaque of 0.5 cm in diameter, shiny, well-defined edges, located in the right armpit. (B) Erythematous edematous plaque of 3 cm in diameter, shiny, well-defined edges, located in the left armpit.

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many applications.[7] In the Middle Ages it was used to "light" the writing paper. Alum has been as a natural deodorant to contain sweating from the armpits, feet or different parts of the body. Upon contact with water, this stone gives off small particles that form a thin layer over the applied area, reducing sweat output and eliminating bacteria that cause bad odor.[8] Alum deodorant stick is composed by potassium alum, soluble in water, with odorless and colorless translucent stone. It is also used as a healing and antiseptic after waxing and shaving. It manages to calm the damaged area while disinfecting it. Make sure that the skin is not irritated or infected by preventing the annoying ingrown hairs from appearing. The differential diagnosis includes inverted psoriasis, erythrasma, lymphoproliferative diseases, and eczema from allergic contact to deodorants.

Author´s contribution

RRV, FNT, Acquisition of data, Editing.
RRV, FNT, Study concept and Design, Writing, Editing.
RRV, FNT Design, Critical Review.

Conflict of interest

The authors have no conflict of interest to declare and no prior presentation.

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References

1. Voller LM, Kullberg SA, Warshaw EM. Axillary allergic contact dermatitis to topical clindamycin. *Contact Dermatitis*. 2020;82(5):313–314.
2. Amaro C, Santos R, Cardoso J. Contact allergy to methylisothiazolinone in a deodorant. *Contact Dermatitis*. 2011;64(5):298–299.
3. Jacob SE. Allergic contact dermatitis from lyral in an aerosol deodorant. *Dermatitis*. 2008;19(4):216–217.
4. Hemmer W, Focke M, Leitner B, et al. Axillary dermatitis from farnesol in a deodorant. *Contact Dermatitis*. 2000;42(3):168–169.
5. Isaksson M, Karlberg AT, Nilsson U. Allergic contact dermatitis caused by oxidized linalool in a deodorant. *Contact Dermatitis*. 2019;81(3):213–214.
6. Sheu M, Simpson EL, Law SV, et al. Allergic contact dermatitis from a natural deodorant: a report of 4 cases associated with lichen acid mix allergy. *J Am Acad Dermatol*. 2006;55(2):332–337.
7. Gallego H, Lewis EJ, Crutchfield CE 3rd. Crystal deodorant dermatitis: irritant dermatitis to alum-containing deodorant. *Cutis*. 1999;64(1):65–66.
8. Lewis L, Carson S, Bydder S, et al. Evaluating the effects of aluminum-containing and non-aluminum containing deodorants on axillary skin toxicity during radiation therapy for breast cancer: a 3-armed randomized controlled trial. *Int J Radiat Oncol Biol Phys*. 2014;90(4):765–771.